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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Group Art Unit 3751

In re

Patent Application of

Keith Marshall

Application No. 10/678,394

Confirmation No.: 3511

Filed: October 3, 2003

Examiner: Prunner, Kathleen J.

"ELECTRONIC FLUSH VALVE WITH FLOOD CONTROLS"

I, Bridget Laack, hereby certify that this correspondence is being deposited with the US Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date of my signature.

Bridget Laack
Signature

January 6, 2006
Date of Signature

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith is an Appeal Brief in the above-identified application.

A check in the amount of $500.00 in payment of the required fee.

A return receipt postcard.

In the event Applicant has overlooked the need to request an extension of time, please consider this a request for the same.

Charge or credit Deposit Account No. 13-3080 with any shortage or overpayment of the fees associated with this communication. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicant appeals from the final rejection dated June 1, 2005. Applicant notes that a Notice of Appeal was filed October 5, 2005 and received by the Patent Office on October 7, 2005. Applicant has included a request for a one-month extension, thereby extending the filing date for the Appeal Brief to January 7, 2006. A check for $500.00 is included herewith in payment of the fee required under 37 CFR 41.20(b)(2). Please charge or credit Deposit Account No. 13-3080 with any underpayment or overpayment of fees.

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(1) Real Party in Interest.

The real party in interest is Acorn Engineering Co., Inc., La Puenta, California, 91744.

(2) Related Appeals and Interferences.

There are no related appeals or interferences.

(3) Status of Claims.

Claims 1-17 and 19-21 are pending and are attached as Appendix A. Claim 18 has been cancelled. Claims 1-17 and 19-21 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Claims 14, 16, and 21 stand rejected under 35 U.S.C. §112, second paragpraph, as being indefinite. Claims 1-17 and 19-21 stand rejected under 35 U.S.C. §102(b) as being anticipated by Laverty, Jr. (U.S. Patent No. 4,802,246). Claims 1-4, 6-9, 11-15, 17 and 19-21 stand rejected under 35 U.S.C. §102(a) and 102(e) as being anticipated by Quintana et al. (U.S. Patent No. 6,877,170). Claims 5, 10, and 16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Quintana et al. in view of Laverty, Jr. Applicants appeal the 35 U.S.C. §112, first paragraph rejection of claims 1-17 and 19-21, the 35 U.S.C. §112, second paragraph rejections of claims 14, 16, and 21, and all of the rejections under 35 U.S.C. §102 and §103.

(4) Status of Amendments.

No amendments have been filed subsequent to the final rejection.

(5) Summary of Claimed Subject Matter.

The invention according to one embodiment is illustrated in Figs. 1-3 of the application. Independent claim 1 is directed to a toilet that includes a bowl (15) sized to contain a liquid see *p.3 lines 17-19*, and a valve (40) movable from a normally-closed position in which a liquid does not flow to the bowl to an open position in which the liquid is delivered to the bowl see *p.4 lines 3-8*. The toilet also includes a sensor (70) that is operable to sense a liquid level within the bowl and output an electrical signal indicative of the liquid level, and an actuator (90) that is movable between a flush position and an idle position *see p.4 lines 9-16 and p.4 line 22 – p.5 line 8*. An electronic controller (95) is coupled to the sensor to receive the electrical signal *see FIG. 1 and p.6 line 19 – p.7 line 2*. The controller is operable to move the valve to the open position in response to movement of the actuator to the flush position and the receipt of the electrical signal having a value indicative that the liquid level within the bowl is below a predetermined level (80) *see p.6 lines 1-4 and 19-20, p.7 lines 20-21, and p.8 lines 17-20*.

Independent claim 9 is directed to an electrically-controlled toilet that includes a bowl (15) sized to contain a liquid see *p.3 lines 17-19*. A solenoid-operated valve (40) is movable between a normally-closed position in which a liquid does not flow to the bowl and an open position in which the liquid is delivered to the bowl *see p.7 line 20 – p.8 line 16*. A liquid-level sensor (70) is at least partially positioned within the bowl and is operable to sense a liquid level within the bowl *see p.4 lines 9–16*. The liquid-level sensor is operable to output an electrical flood signal in response to a sensed liquid-level above a predetermined level (80) *see p.4 line 22 – p.5 line 8*. An actuator (90) is movable between a flush position and an idle position *see p.6 lines 1-4*. A controller (95) is operable to move the valve to the open position in response to movement of the actuator to the flush position and the absence of the flood signal *see p.6 lines 19-20, p.7 lines 20-21, and p.8 lines 17-20.*

Independent claim 15 is directed to a method of operating a toilet. The method includes providing a bowl (15) operable to contain a liquid *see p.3 lines 17-19*, sensing a liquid level within the bowl *see p.4 lines 9–16*, and generating an electrical signal indicative of the liquid level *see p.4 line 22 – p.5 line 8.* The method also includes moving an actuator (90) to a flush position and opening a valve (40) to provide a flow of liquid to the bowl when the actuator is in the flush position and the generated electrical signal corresponds to a liquid level within the bowl that is below a predetermined value (80) *see p.6 lines 1-4 and 19-20, p.7 lines 20-21, and p.8 lines 17-20.*

(6) Grounds of Rejection to be Reviewed on Appeal.

Whether claims 1-17 and 19-21 fail to comply with the written description requirement under 35 U.S.C. §112, first paragraph. Whether claims 14, 16, and 21 are indefinite under 35 U.S.C. §112, second paragraph. Whether claims 1-17 and 19-21 are anticipated by Laverty, Jr. (U.S. Patent No. 4,802,246) under 35 U.S.C. §102(b). Whether claims 1-4, 6-9, 11-15, 17 and 19-21 are anticipated by Quintana et al. (U.S. Patent No. 6,877,170) under 35 U.S.C. §102(a) and 102(e). Whether claims 5, 10, and 16 are unpatentable over Quintana et al. in view of Laverty, Jr. under 35 U.S.C. §103(a).

(7) Argument

A - Rejections of claims 1-17 and 19-21 under 35 U.S.C. §112, first paragraph

Claims 1-17 and 19-21 stand rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

> The burden of showing the inadequacy of a written description falls to the Examiner. A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption. See, e.g., *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971). The examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. The examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. *Wertheim*, 541 F.2d at 263, 191 USPQ at 97.

MPEP 2163.04. In addition,

> [b]y disclosing in a patent application a device that inherently performs a function or has a property, operates according to a theory or has an advantage, a patent application necessarily discloses that function, theory or advantage, even though it says nothing explicit concerning it. The application may later be amended to recite the function, theory or advantage without introducing prohibited new matter.

In re Reynolds, 443 F.2d 384, 170 USPQ 94 (CCPA 1971); *In re Smythe*, 480 F. 2d 1376, 178 USPQ 279 (CCPA 1973). MPEP 2163.07(a).

"While a question as to whether a specification provides an adequate written description may arise in the context of an original claim which is not described sufficiently (see, e.g., *Regents of the University of California v. Eli Lilly*, 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997)), there is a strong presumption that an adequate written description of the claimed invention is present in the specification as filed." *In re Wertheim*, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976). "Consequently, rejection of an original claim for lack of written description should be rare." MPEP 2163.03.

i: Claims 1, 2, 4, and 8

The Examiner contends that the originally filed disclosure fails to support certain features of claim 1. Specifically, the Examiner contends that "the originally filed disclosure fails to support or describe that the sensor 70 senses 'a liquid level within the bowl', i.e., any liquid level within the bowl, and can 'output an electrical signal indicative of any such liquid level." *Office action dated June 1, 2003, page 3, lines 12-15.*

Based on the Examiner's comment it appears as though the Examiner is reading an non-existent limitation into the claim, and then finding a lack of support for that non-existent limitation. Specifically, the Examiner seems to believe that the recitation of "a sensor operable to sense a liquid level within the bowl" requires that the sensor sense "any liquid level within the bowl." This is simply incorrect. While a sensor that senses any liquid level (or simply more than one liquid level) could be employed and would fall within the scope of the claim language, the claim language does not require that the sensor sense any liquid level. Rather, the claim clearly only requires that the sensor sense "a liquid level."

Support for the sensor as claimed can be found in the specification where Applicant states, "the system 10 also includes a sensor 70 at least partially disposed within the bowl 15." *Page 4, lines 9-10.* Furthermore, Applicant discloses

> [t]he sensor 70 is positioned above a normal water level line 75 near a flood line 80. The sensor 70 includes a pressure sensor in the form of a pressure switch 85, a tube 88, and a port 89 disposed behind the wall 20 and in fluid communication with the bowl 15. While a pressure switch 85 is described herein, many other types of pressure sensors could be used to detect when the water level within the bowl 15 exceeds a predetermined value.

Page 4, lines 10-16. Applicant further describes the function of one possible sensor, stating

> [t]he tube 88 connects the pressure switch 85 to the sensor port 89 in the bowl 15. As water rises above the sensor port 89, it covers the end of the tube 88 and seals the air within the tube 88. Thus, any further increase in the water level acts to increase the hydrostatic pressure within the tube 88. At a predetermined pressure, the pressure switch 85 generates a flood signal that indicates a flood is occurring or is imminent.

Page 4, lines 16-21. This language provides clear support for a sensor operable to sense a liquid level.

Furthermore the claim language rejected by the Examiner was part of the originally-filed claims and as such should be given a strong presumption that an adequate written description is present in the specification as filed. See MPEP 2163.03. Support for the originally-filed claims can be found in the claims themselves as well as in the summary. The Examiner has not shown by a preponderance of the evidence, why one of ordinary skill in the art would not recognize in the disclosure a description of the invention defined in claim 1.

Thus, Applicants have clearly described a sensor that can sense a liquid level within a bowl to a level sufficient to allow one of ordinary skill in the art to make and use the invention without undue experimentation.

The Examiner is also of the opinion that the phrase "output an electrical signal indicative of the liquid level" included in claim 1 is not adequately described in the application.

The disclosure describes the output of the sensor stating "the sensor 70 generates a simple signal representing either 'flood' or 'no flood'. Generally, a high voltage (e.g., 5 volts) is used to indicate the flood condition, while a low voltage (approximately zero volts) is used to indicate no flood." *Page 4, line 22-page 5, line 1.* Applicant cannot fathom one of ordinary skill in the art interpreting this phrase as being anything other than an electrical signal indicative of a liquid level (i.e., a level above or below a flood level). While the phrase "electrical signal" is not used, one of ordinary skill in the art would interpret the use of different voltages as an electrical signal. However, this is not the only disclosure provided. Applicant further states,

> a simple switch could be used to open or close a circuit when a flood condition exists. In still other constructions, more than two discrete signals are used. For example, an analog signal range (e.g., 4-20 mA, or 0-5 volts) can be used to represent a pressure range. A signal value above or below a predetermined level would then represent a flood condition.

Page 5, lines 4-8. Thus, in the few paragraphs cited, Applicant discussed the use of discrete voltage signals, a simple switch to open and close a circuit, and the use of an analog signal range including both an amperage range and a voltage range. Applicant cannot understand why the Examiner believes these passages do not provide support for a sensor operable to "output an electrical signal indicative of the liquid level", as recited in claim 1. It appears that the Examiner believes that the disclosure must use the word "electrical" to provide support for the claim language. This simply is not required. In fact, Applicant has provided support for several different electrical systems, let alone the claimed electrical signal. One of ordinary skill in the relevant art would certainly not be inhibited from making or using the invention as claimed because the specification does not define what an "*electrical* signal" is. One of skill in the relevant art appreciates that a voltage or current signal from a sensor is inherently electrical in nature.

Thus, Applicant has clearly described a sensor that can output an electrical signal indicative of the liquid level to a level sufficient to allow one of ordinary skill in the art to make and use the invention without undue experimentation.

The Examiner also contends that the written description does not adequately describe a controller that receives "an electrical signal indicative of" any such liquid level. *See Office action dated June 1, 2005, pgs. 3-4.*

Figure 1 clearly illustrates that the controller 95 is coupled to the sensor 70. As discussed above, the specification describes and supports that the sensor outputs an electrical signal indicative of the liquid level. *See e.g., page 4, line 22-page 5, line 1.* Applicant further states, "controller 95 receives the flood signal and the flush signal and uses these inputs to control a valve 40." *Page 6, lines 19-20.* As discussed above and made clear in the disclosure, the flood signal must be an electrical signal if it is a voltage, voltage range, current range, etc. Thus, one or ordinary skill in the art would read and interpret the specification to disclose a system that generates an electrical flood signal when the water level within the bowl meets or exceeds a flood level. Clearly, the flood signal is indicative of a water level (i.e., a water level at or in excess of a flood level). The flood signal is then received by the controller to allow the controller to use the water level information if desired.

Thus, Applicants have clearly described a controller that receives an electrical signal (i.e., the flood signal) that is indicative of a liquid level to a level sufficient to allow one of ordinary skill in the art to make and use the invention without undue experimentation.

The Examiner further alleges that the portion of claim 1, reciting that the electronic controller is "operable to move the valve to the open position in response to movement of the actuator to the flush position and the receipt of the electrical signal having a value indicative that the liquid level within the bowl is below a predetermined level" is not adequately described in the specification.

Applicant describes a valve that moves between an open position and a closed position in response to energization and de-energization of a solenoid 60. *See page 7, lines 20-21 and page 8, lines 8-9.* Applicant also states that the controller 95 energizes the solenoid 60. *Page 8, line 18.* Thus, the controller indirectly opens the valve by energizing the solenoid. Furthermore, in describing the operation of the invention, Applicant states,

> the controller 95 of Fig. 1 receives a flush signal when the push button 90 is moved to a flush position. The controller 95 energizes the solenoid 60 only if no signal is received from the flood sensor 70, or a signal is received that indicates that no flood is occurring. Once the flush sequence is initiated, the controller 95 times the duration that the valve 40 is in the open position. After a predetermined length of time, the controller 95 deenergizes the solenoid 60 and the valve 40 closes.

Page. 8, lines 17-22. Thus, there is clear support for the limitation noted by the Examiner. As described in the specification, the valve moves in response to the energization of the solenoid. Applicant further states that the controller 95 receives a flush signal when the push button 90 is moved and, that the solenoid is only energized when "no signal is received from the flood sensor 70, or a signal is received that indicates that no flood is occurring." *Id.* As discussed above, it is clear from the specification that the signal from the flood sensor must be electrical in nature. Thus, there is clear support for the rejected limitation and Applicant is at a loss as to understand the Examiner's rejection.

In light of the foregoing, Applicant contends that the specification provides more than sufficient support for the limitations of claim 1. As such, the written description is adequate and Applicant respectfully requests the withdrawal of the 35 U.S.C. §112, first paragraph rejection of claim 1.

ii: Claim 3

The Examiner has rejected claim 3 for allegedly failing to meet the written description requirement. Specifically, the Examiner states "the originally filed disclosure fails to support or describe that the sensor 70 senses 'a liquid level within the bowl', i.e., any liquid level within the bowl." *Office action dated June 1, 2005, page 5.*

The Examiner has again erred by reading a non-existent limitation into the claim and then finding a lack of support for the non-existent limitation. Specifically, the Examiner seems to believe that the claims require a sensor that senses any liquid level within the bowl. As discussed with regard to claim 1, Applicant claims and clearly discloses a sensor that senses a liquid level, and not necessarily any liquid level. While the claim as recited would read on a device that senses any liquid level, all that is required is that the sensor sense one liquid level, such as a flood level. Applicant describes one possible sensor that includes a pressure switch that senses a pressure change that is indicative of a water level change. *See page 4, lines 12-21.* While this measurement is indirect, it is a sensor that senses a liquid level within a bowl. Applicant further describes an alternative in which a simple float switch is employed. *See page 5, lines 10-11.* Even incorporating the examiner's incorrect reading of the claim language, one can hardly argue that a float switch, as disclosed by Applicant, does not sense a liquid level.

Furthermore, claim 3 is an originally-filed claim. As such, "there is a strong presumption that an adequate written description of the claimed invention is present in the specification as filed." *In re Wertheim*, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976). The Examiner has failed to show, by a "preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims." *Wertheim*, 541 F.2d at 263, 191 USPQ at 97.

In light of the foregoing, Applicants believe there is clear written support for the limitations of claim 3. As such, Applicants respectfully request the withdrawal of the 35 U.S.C. §112, first paragraph rejections of claim 3.

iii. Claims 5 and 10

The Examiner has rejected claims 5 and 10 for allegedly failing to meet the written description requirement. Specifically, the Examiner is of the opinion that the specification does not adequately support or describe a sensor that "detects a pressure indicative of a liquid level within the bowl", i.e., any liquid level within the bowl. In addition, the Examiner believes the limitation "sends an electrical signal to the controller when the pressure exceeds a predetermined value" is also not supported. *See Office action dated June 1, 2005, pg. 5.*

As discussed with regard to claims 1 and 3, the Examiner has incorrectly read the claim as requiring a sensor that senses any liquid level instead of a liquid level. Thus, the Examiner has read a non-existent limitation into the claim and then found a lack of support for the non-existent limitation. The Examiner herself quotes the specification which reads "the sensor 70 directly detects the presence of water at the elevated level". *Page 5, lines 9-10.* In addition, when describing the function of one possible sensor, Applicant states,

> [t]he sensor 70 includes a pressure sensor in the form of a pressure switch 85, a tube 88, and a port 89 disposed behind the wall 20 and in fluid communication with the bowl 15. While a pressure switch 85 is described herein, many other types of pressure sensors could be used to detect when the water level within the bowl 15 exceeds a predetermined value. The tube 88 connects the pressure switch 85 to the sensor port 89 in the bowl 15. As water rises above the sensor port 89, it covers the end of the tube 88 and seals the air within the tube 88. Thus, any further increase in the water level acts to increase the hydrostatic pressure within the tube 88. At a predetermined

> pressure, the pressure switch 85 generates a flood signal that indicates a flood is occurring or is imminent.

Page 4, lines 12-21. Thus, Applicant has described one sensor that measures a hydrostatic pressure to determine if the water level within a bowl exceeds a flood level. In addition, as discussed with regard to claims 1 and 3, the flood signal is clearly discussed using terms that would lead one of ordinary skill in the art to conclude that the flood signal is an electrical signal. *See page 4, line22 –page 5, line 8.* Thus, it is clear that these statements alone provide adequate support and would enable one of ordinary skill in the art to make and use the invention as claimed without undue experimentation.

In light of the foregoing, Applicant believes there is clear written support for the limitations of claims 5 and 10. As such, Applicant respectfully requests the withdrawal of the 35 U.S.C. §112, first paragraph rejections of claims 5 and 10.

iv: Claims 6 and 11

The Examiner has rejected claims 6 and 11 for allegedly failing to meet the written description requirement. Claims 6 and 11 depend from claims 1 and 9 respectively and add that "the controller inhibits movement of the valve to the open position when the sensor senses a liquid level above the predetermined level."

Applicant states "[t]he controller 95 energizes the solenoid 60 only if no signal is received from the flood sensor 70, or a signal is received that indicates that no flood is occurring." *Page 8, lines 18-20.* Because the solenoid is only energized by the controller if there is no signal or a "no flood" signal from the sensor, it otherwise inhibits the valve from being opened despite a flush signal from the flush button.

Furthermore, each of these claims was part of the original disclosure and neither has been amended. As such, "there is a strong presumption that an adequate written description of the claimed invention is present in the specification as filed." *In re Wertheim*, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976). The Examiner has failed to show, by a "preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims." *Wertheim*, 541 F.2d at 263, 191 USPQ at 97.

In light of the foregoing, Applicant believes there is clear written support for the limitations of claims 6 and 11. As such, Applicant respectfully requests the withdrawal of the 35 U.S.C. §112, first paragraph rejections of claims 6 and 11.

v: Claims 7 and 12

The Examiner has rejected claims 7 and 12 for allegedly failing to meet the written description requirement. Claims 7 and 12 depend from claims 1 and 9 respectively and add "a timer operable to initiate movement of the valve to the closed position after the valve has been in the open position for a predetermined length of time."

Applicant states that "[o]nce the flush sequence is initiated, the controller 95 times the duration that the valve 40 is in the open position. After a predetermined length of time, the controller 95 deenergizes the solenoid 60 and the valve 40 closes." *Page 8, lines 20-22.* Thus, Applicant discloses a controller with a timer to time an electronic operation. Timers are available in virtually every form of computing and programming in existence and need not be described in detail to convey the invention at hand to one of ordinary skill in the relevant art. Applicant notes that 35 U.S.C. §112, first paragraph only requires that the description be enabling and does not require an instruction manual or parts list. One of ordinary skill in the relevant art would not have a problem utilizing an integrated timer of a controller or a stand alone timer in order to make and use the invention as claimed based on the disclosure contained in the written description.

Furthermore, claims 7 and 12 are originally-filed claims. As such, "there is a strong presumption that an adequate written description of the claimed invention is present in the specification as filed." *In re Wertheim*, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976). The Examiner has failed to show, by a "preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims." *Wertheim*, 541 F.2d at 263, 191 USPQ at 97.

In light of the foregoing, Applicant believes there is clear written support for the limitations of claims 7 and 12. As such, Applicant respectfully requests the withdrawal of the 35 U.S.C. §112, first paragraph rejections of claims 7 and 12.

vi: Claims 9, 13, 16-17, and 19-20

The Examiner has rejected claim 9 under 35 U.S.C. §112, first paragraph. Specifically, the Examiner alleges that the "disclosure fails to support or describe that the sensor 70 is a 'liquid-level' sensor or that it senses 'a liquid level within the bowl', i.e., any liquid level within the bowl." *Office action dated June 1, 2005, page 7.*

The arguments made with regard to claim 1, are equally applicable to claim 9. Rather than represent the arguments, Applicant refers to the arguments presented above. As discussed with regard to claim 1, the specification contains substantial support for a sensor that senses a liquid level within a bowl. *See e.g., page 4, lines 10-16.* Again, it appears as though the Examiner is reading a non-existent limitation into the claim and then finding no support for this non-existent limitation in the specification. Specifically, the Examiner seems to think that the recitation of a sensor that senses a liquid level necessarily requires the sensor to sense all liquid levels. This is simply wrong.

Furthermore, the limitation identified by the Examiner as being unsupported is part of the original claim and is included in the summary section of the disclosure. As such, the exact phrasing being rejected was part of the original disclosure.

As such, Applicant contends that the written description for a sensor that senses a liquid level within the bowl is sufficient to allow one of ordinary skill in the art to make and use the invention without undue experimentation.

As for the portion of the claim that requires the sensor to be a liquid-level sensor, the term "liquid-level sensor" was included in the original claim as well as in the summary of the application. The term "liquid-level sensor" is also included in claim 3. However, the Examiner found support for the language in claim 3. In addition, the sensor and its function are discussed extensively within the specification making it clear that the sensor senses a liquid level (e.g., flood or no flood). Applicant believes any sensor that senses a liquid level, directly or indirectly, can be identified as a liquid-level sensor.

As such, Applicant contends that the written description for a "liquid-level sensor" is sufficient to allow one of ordinary skill in the art to make and use the invention without undue experimentation.

The Examiner also argues that the written description does not provide sufficient support for a sensor that "outputs 'an electrical' flood signal that is 'in response to a sensed liquid-level above a predetermined level.'" *Office action dated June 1, 2005, page 7.*

As discussed with regard to claim 1, the disclosure clearly discusses a sensor that outputs a signal that in some constructions can be a voltage or a current. Specifically, Applicant states "the sensor 70 generates a simple signal representing either 'flood' or 'no flood'. Generally, a high voltage (e.g., 5 volts) is used to indicate the flood condition, while a low voltage (approximately zero volts) is used to indicate no flood." *Page 4, line 22-page 5, line 1.* One or ordinary skill in the art would recognize a voltage or a current as an electrical signal. In addition, one of ordinary skill in the art would recognize that the system as described predefines a flood level and varies the electrical signal in response to a water level above or below that level. Thus, there is significant support for a liquid-level sensor operable to output an electrical signal in response to a sensed liquid level above a predetermined level. *See e.g., page 4, lines 9-21.*

As such, Applicant contends that written description for a liquid-level sensor operable to output an electrical signal in response to a sensed liquid level above a predetermined level is sufficient to allow one of ordinary skill in the art to make and use the invention without undue experimentation.

The Examiner also argues that the written description fails to provide adequate support for "operable to move the valve to the open position in response to movement of the actuator to the flush position and the absence of the flood signal." *Office action dated June 1, 2005, page 8.*

As discussed above with regard to claim 1, and incorporated herein, the disclosure provides significant support for this claim language. For example, Applicant states that the controller "receives a flush signal when the push button 90 is moved to a flush position. The controller 95 energizes the solenoid 60 only if no signal is received from the flood sensor 70, or a signal is received that indicates that no flood is occurring." *Page 8, lines 17-20.* The valve 40 is opened by energizing the solenoid 60. *See page 7, line 20.* Thus, it is clearly disclosed that the controller energizes the solenoid only if no signal is received from the flood sensor. This is "the absence of the flood signal" as recited in the claim. To further clarify this, Applicant states that the sensor "generates a simple signal representing either 'flood' or 'no flood.'" *Page 4, lines 22-23.*

As such, Applicant contends that the written description for "operable to move the valve to the open position in response to movement of the actuator to the flush position and the absence of the flood signal" is sufficient to allow one of ordinary skill in the art to make and use the invention without undue experimentation.

In light of the foregoing, Applicant believes there is clear written support for the limitations of claim 9. As such, Applicant respectfully requests the withdrawal of the 35 U.S.C. §112, first paragraph rejections of claim 9.

vii: Claim 14

The Examiner has rejected claim 14 under 35 U.S.C. §112, first paragraph. Specifically, the Examiner alleges that the "disclosure fails to support or describe that the sensor 'sends a first signal to the controller when the liquid level is below the predetermined value and the sensor sends a second signal to the controller when the liquid level is above the predetermined value.'" *Office action dated June 1, 2005, page 9.*

In the first Office action for this case, the Examiner found support for claim 14 and made no 35 U.S.C. §112, first paragraph rejection. *See Office action dated October 29, 2004.* However, in response to the first Office action Applicant amended claim 14 to correct an antecedent basis error. Specifically, "a predetermined" was amended to "the predetermined" at two locations within the claim. The Examiner has now determined that these minor amendments amount to new matter and are not supported by the specification. Applicant is astounded at this interpretation and can only conclude that the Examiner is of the belief that all claim amendments warrant a new matter rejection.

Furthermore, in support of "the predetermined," Applicant states, "many other types of pressure sensors could be used to detect when the water level within the bowl 15 exceeds a predetermined value." *Page 4, lines 14-16.* In addition, in some constructions, "the sensor 70 generates a simple signal representing either 'flood' or 'no flood'." *Page 4, lines 22-23.* Thus, one of ordinary skill in the art would quickly conclude that the signal representing no flood is the first signal and the signal representing flood is the second signal, and that these signals are sent to the controller. *See page 6, line 19.* Even if one concluded that a signal is only generated for one condition, one of ordinary skill would understand that the absence of a signal (e.g., zero volts, zero amps) amounts to a second signal. In addition, one of ordinary skill in the art would quickly conclude that the flood line is the predetermined value.

In light of the foregoing, Applicant believes there is clear written support for the limitations of claim 14. As such, Applicant respectfully requests the withdrawal of the 35 U.S.C. §112, first paragraph rejections of claim 14.

viii: Claim 15

The Examiner has rejected claim 15 under 35 U.S.C. §112, first paragraph. Specifically, the Examiner alleges that the "disclosure fails to support or describe that the sensor 70 is a 'liquid-level' sensor or that it senses 'a liquid level within the bowl', i.e., any liquid level within the bowl and that 'an electrical signal indicative of the liquid level' is generated." *Office action dated June 1, 2005, page 10.*

Applicant has addressed these rejections with regard to claims 1, 3, and 9. The arguments presented above with regard to these claims is equally applicable to claim 15. Rather than represent the arguments, Applicant simply incorporates them herein to overcome the Examiner's rejections.

The Examiner also alleges that support is not provided for "opening the valve...when the actuator is in the flush position and the generated electrical signal corresponds to a liquid level within the bowl that is below a predetermined value." *Office action dated June 1, 2005, page 10.*

Applicant states, "the controller 95 of Fig. 1 receives a flush signal when the push button 90 is moved to a flush position. The controller 95 energizes the solenoid 60 only if no signal is received from the flood sensor 70, or a signal is received that indicates that no flood is occurring." *Page 8, lines 17-20.* As discussed with regard to claim 14, the no flood signal corresponds to a liquid level within a bowl that is below a predetermined value. One of ordinary skill in the art would immediately arrive at this conclusion

Furthermore, most of the claim language rejected by the Examiner was part of the original disclosure and as such is supported by the claim itself as well as the summary. While the claim was amended, there is clear support for the amendment (see discussion with respect to claims 1 and 9 regarding the support for generating an electrical signal). Additionally, the mere fact that a claim has been amended does not automatically warrant a new matter rejection.

In light of the foregoing, Applicant believes there is clear written support for the limitations of claim 15. As such, Applicant respectfully requests the withdrawal of the 35 U.S.C. §112, first paragraph rejections of claim 15.

ix: Claim 21

The Examiner has rejected claim 21 under 35 U.S.C. §112, first paragraph. Specifically, the Examiner alleges that the Claim 21 does not provide adequate support for steps of "delivering the generated electrical signal to the controller," "comparing the generated electrical signal to a flood signal," and "inhibiting the opening step when the generated electrical signal matches the flood signal." *See Office action dated June 1, 2005, page 11.*

Applicant states, "the controller 95 of Fig. 1 receives a flush signal when the push button 90 is moved to a flush position. The controller 95 energizes the solenoid 60 only if no signal is received from the flood sensor 70, or a signal is received that indicates that no flood is occurring." *Page 8, lines 17-20.* Furthermore, "[t]o open the valve 40, the solenoid 60 is first energized to move a plunger 145 to an open position." *Page 7, lines 20-21.* One of skill in the relevant art would not be confused by interchanging "delivering the generated electrical signal to the controller" and the controller "receives a flush signal." Applicant cannot imagine a system in which a signal is received but yet is not delivered. It is commonly understood that an electrical signal is sent from one component to another to constitute a "signal" in its simplest sense. Thus, there is clear support for the delivery step.

With regard to the comparing step, Applicant cannot imagine a system that does not compare the generated electrical signal to a flood signal. Applicant discloses that "[t]he controller 95 energizes the solenoid 60 only if no signal is received from the flood sensor 70, or a signal is received that indicates that no flood is occurring." *Page 8, lines 18-20.* One of ordinary skill in the art will immediately realize that a controller may receive a signal, but until it is programmed or otherwise configured, the signal has no meaning to the controller. Thus, the controller must be programmed or otherwise configured to function as desired in response to a particular signal. For example, the controller may have to be programmed to understand that a five-volt signal is indicative of a flood. Thus, a signal arrives at the controller and it is compared to a reference or to a program to determine what the signal means and what if anything the controller should do in response to the signal. This type of comparison is inherent in a controller and would not need to be explained to one of ordinary skill in the art. Thus, Applicant contends that the support for the comparing step is sufficient to enable one of ordinary skill in the art to make and use the invention.

With regard to the "inhibiting the opening step when the generated electrical signal matches the flood signal," Applicant notes that the controller only energizes the solenoid if no signal or a "no flood" signal is received from the flood sensor. *See page 8, lines 17-20.* Thus, when the flush button is pushed, the controller inhibits the opening of the valve, unless the proper no flood signal is received. Again, one of ordinary skill in the art would be able to make and use the invention recited in claim 21 without undue experimentation based solely on the disclosure provided.

In light of the foregoing, Applicant believes there is clear written support for the limitations of claim 21. As such, Applicant respectfully requests the withdrawal of the 35 U.S.C. §112, first paragraph rejections of claim 21.

B - Rejections of claims 14, 16, and 21 under 35 U.S.C. §112, second paragraph

i. Claim 14

The Examiner has alleged that "the predetermined value" lacks proper antecedent basis. Applicant notes that "a predetermined value" is introduced in claim 9. As claim 14 depends from claim 9, it is proper for claim 14 to recite "the predetermined value."

In light of the foregoing, Applicant respectfully requests the withdrawal of the 35 U.S.C. §112, second paragraph rejection of claim 14.

ii. Claims 16 and 21

Claim 16 recites "the sensing step" and claim 21 recites "the opening step", both in reference to the steps laid out by claim 15. In claim 16, "the sensing step" refers to "sensing a liquid level within the bowl." In claim 21, "the opening step" refers to "opening a valve to provide a flow of liquid…" Applicant submits that neither claim 16 nor claim 21 lack proper antecedent basis for this reason. The second paragraph of 35 U.S.C. §112 does not require *exact* antecedent basis, it requires that the claim be distinct. Applicant believes claims 16 and 21 to be clearly understood and distinct.

In light of the foregoing, Applicant respectfully requests the withdrawal of the 35 U.S.C. §112, second paragraph rejection of claim 16 and 21.

C - Rejections of claims 1-17 and 19-21 under 35 U.S.C. §102(b)

Claims 1-17 and 19-21 stand rejected under 35 U.S.C. §102(b) as being anticipated by Laverty, Jr. (U.S. Patent No. 4,802,246).

In order for a reference to anticipate a claim, the reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP § 2131.01 citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." MPEP § 2131.01 citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

In evaluating the scope of the claims, the Examiner must give the claims the broadest possible scope. However, the broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. MPEP §2111 citing *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999) (The Board's construction of the claim limitation "restore hair growth" as requiring the hair to be returned to its original state was held to be an ** >incorrect< interpretation of the limitation. The court held that, consistent with applicant's disclosure and the disclosure of three patents from analogous arts using the same phrase to require only some increase in hair growth, one of ordinary skill would construe "restore hair growth" to mean that the claimed method increases the amount of hair grown on the scalp, but does not necessarily produce a full head of hair.).

i: Claims 1, 2-4, and 6-8

Claim 1 recites, among other things, a sensor operable to sense a liquid level within the bowl and output an electrical signal indicative of the liquid level. An electronic controller is coupled to the sensor to receive the electrical signal. The controller is operable to move the valve to the open position in response to movement of the actuator to the flush position and the receipt of the electrical signal having a value indicative that the liquid level within the bowl is below a predetermined level.

Laverty, Jr. does not teach or suggest a sensor operable to output an electrical signal indicative of the liquid level. Rather, the sensor 16 of Laverty, Jr. operates on mechanical principles alone, and does not suggest using an electrical signal to report a liquid level within the bowl to an electronic controller to control valve operation. Figs. 1-4 are of particular assistance in understanding the operation of the Laverty, Jr. device. The sensor 16 includes a float 23 that senses the water level in the bowl 6. The float 23 moves to the phantom position of Fig. 2 by buoyancy, forcing the plunger rod 24 up with it. This opens a passage of fluid communication between chamber 28a and chamber 27. Water in lines 21 and 22 is therefore in fluid communication. Line 22 is connected to the drain 10. Water flows through line 14a, line 21, and the sensor 16a to line 22 and the drain 10, preventing pressure build-up in line 14a. Without pressure build-up in line 14a, the piston actuator assembly 15 cannot be moved to the open position to allow a flush. Thus, Laverty, Jr. does not disclose a sensor operable to sense a liquid level within the bowl and output an electrical signal indicative of the liquid level, as claimed in claim 1.

Furthermore, Laverty, Jr. cannot disclose an electronic controller to receive the electrical signal (indicative of the liquid level) from the sensor as there is no electrical signal indicative of the liquid level to begin with. Laverty, Jr. does disclose an infrared sensor 120 described in columns 10 and 11 of Laverty, Jr. However, this sensor is irrelevant to Applicant's claim. The infrared sensor 120 of Laverty, Jr. is operable to trigger the flush operation electronically via a solenoid valve 100, eliminating the need to push the user-operated actuator, pushbutton 63. The sensor does not affect the operation of the mechanical sensor 16, nor does it replace the mechanical sensor 16 which is still required to sense the liquid level in the bowl.

In light of the foregoing, Laverty, Jr. does not teach or suggest each and every limitation of claim 1. As such, claim 1 is allowable over Laverty, Jr. In addition, claims 2-4 and 6-8 depend from claim 1 and are also allowable over Laverty, Jr.

ii. Claim 5

Claim 5 depends from claim 1 and is allowable for the reasons set forth with regard to claim 1. Claim 5 adds that the sensor detects a pressure indicative of a liquid level within the bowl and sends an electrical signal to the controller when the pressure exceeds a predetermined value.

Laverty, Jr. does not teach or suggest a sensor that detects a pressure indicative of a liquid level within a bowl. Rather, Laverty, Jr. discloses a float type sensor that senses a water level based solely on buoyancy. Specifically, when the water level within the bowl exceeds the level of a tube 18a, the water flows into the housing 17 to raise the float 23. Laverty, Jr. makes no mention of detecting a pressure, much less detecting a pressure indicative of a liquid level within a bowl.

In light of the foregoing, Laverty, Jr. does not teach or suggest each and every limitation of claim 5. As such, claim 5 is allowable over Laverty, Jr.

iii: Claim 9 and 11-14

Claim 9 recites, among other things, a liquid-level sensor at least partially positioned within the bowl and operable to sense a liquid level within the bowl, the liquid-level sensor operable to output an electrical flood signal in response to a sensed liquid-level above a predetermined level.

As discussed with regard to claim 1, Laverty, Jr. does not teach or suggest a liquid-level sensor operable to output an electrical flood signal in response to a sensed liquid-level above a predetermined level. Rather, Laverty, Jr. discloses a flush valve operating system that includes a sensor in the form of a float sensor that is operable to disable a flush. However, the float sensor does not output an electrical flood signal in response to a sensed liquid-level above a predetermined level. The float is purely mechanical and includes no electrical components capable of generating or outputting an electrical signal.

In light of the foregoing, Laverty, Jr. does not teach or suggest each and every limitation of claim 9. As such, claim 9 is allowable over Laverty, Jr. In addition, claims 11-14 depend from claim 9 and are also allowable over Laverty, Jr.

iv: Claim 10

Claim 10 depends from claim 9 and is allowable for the reasons set forth with regard to claim 9. Claim 10 adds that the sensor detects a pressure and sends the flood signal to the controller when the pressure exceeds a predetermined value.

As discussed with regard to claim 5, Laverty, Jr. does not teach or suggest a sensor that detects a pressure. Rather, Laverty, Jr. discloses a float type sensor that senses a water level based solely on buoyancy. Specifically, when the water level within the bowl exceeds the level of a tube 18a, the water flows into the housing 17 to raise the float 23. Laverty, Jr. makes no mention of detecting a pressure, much less detecting a pressure and sending a flood signal to a controller when the pressure exceeds a predetermined value.

In light of the foregoing, Laverty, Jr. does not teach or suggest each and every limitation of claim 10. As such, claim 10 is allowable over Laverty, Jr.

v: Claim 15, 17, and 19-20

Claim 15 defines a method that includes, among other things, sensing a liquid level within the bowl and generating an electrical signal indicative of the liquid level.

As discussed with regard to claims 1 and 9, Laverty Jr. does not teach or suggest a method that includes sensing a liquid level within the bowl and generating an electrical signal indicative of the liquid level. Rather, Laverty Jr. discloses a system that senses a liquid level in a bowl using a purely mechanical means. Specifically, Laverty, Jr. discloses a float valve. Because the device taught by Laverty, Jr. is purely mechanical, it cannot and does not generate an electrical signal indicative of the liquid level within the bowl. The only electrical components taught by Laverty, Jr. include an infrared sensor that detects when a person is standing in front of the sensor and a solenoid. Neither of these components detects a liquid level within a bowl, much less generates an electrical signal indicative of the liquid level within the bowl.

In light of the foregoing, Laverty, Jr. does not teach or suggest each and every limitation of claim 15. As such, claim 15 is allowable over Laverty, Jr. In addition, claims 17 and 19-20 depend from claim 15 and are also allowable over Laverty, Jr.

vi. Claim 16

Claim 16 depends from claim 15 and is allowable for the reasons set forth with regard to claim 15. In addition, claim 16 adds that the sensing step includes measuring a pressure within the bowl.

As discussed with regard to claims 5 and 10, Laverty, Jr. discloses no device that measures a pressure within the bowl. Rather, Laverty, Jr. discloses a system that uses a float to measure a liquid level within the bowl. The pressure within the bowl is not measured and is irrelevant to the function of the system of Laverty, Jr.

In light of the foregoing, Laverty, Jr. does not teach or suggest each and every limitation of claim 16. As such, claim 16 is allowable over Laverty, Jr.

vii: Claim 21

Claim 21 depends from claim 15 and is allowable for the reasons set forth with regard to claim 15. Claim 21 adds the additional steps of providing an electronic controller, delivering the generated electrical signal to the controller, comparing the generated electrical signal to a flood signal, and inhibiting the opening step when the generated electrical signal matches the flood signal.

Laverty, Jr. does not teach or suggest, among other things, delivering the generated electrical signal to the controller. As recited in claim 15, the generated electrical signal is indicative of the liquid level. Laverty, Jr. only includes one component, the infrared sensor, that generates an electrical signal. However, this signal is not indicative of a liquid level within the bowl.

In light of the foregoing, Laverty, Jr. does not teach or suggest each and every limitation of claim 21. As such, claim 21 is allowable over Laverty, Jr.

D - Rejections of claims 1-4, 6-9, 11-15, 17, and 19-21 under 35 U.S.C. §102(a) and 102(e)

i: Claims 1-4, 6-9, 11-15, 17 and 19-21

Claims 1-4, 6-9, 11-15, 17 and 19-21 stand rejected as being anticipated by Quintana et al. (U.S. Patent No. 6,877,170) under 35 U.S.C. §102(a) and 102(e).

Applicant submits that the invention as recited in the claims was conceived and reduced to practice before the filing date of Quintana. Specifically, Applicant conceived the invention prior to June 9, 2003 and reduced the invention to practice on or before June 9, 2003 as evidenced by the 37 CFR §1.131 Declaration of Carlos Galeazzi (Appendix B).

In light of the Declaration and photographic evidence contained in Appendix B, Applicant contends that Quintana (U.S. Patent 6,877,170 filed July 21, 2003) is not prior art under any section of 35 U.S.C. § 102. As such, Applicant respectfully requests the withdrawal of the 35 U.S.C. §102(a) and §102(e) rejections of claims 1-4, 6-9, 11-15, 17, and 19-21.

E - Rejections of claims 5, 10, and 16 under 35 U.S.C. §103(a)

i: Claims 5, 10, and 16

Claims 5, 10, and 16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Quintana et al. in view of Laverty, Jr.

As noted above with respect to the rejection of claims under 35 U.S.C. §102(a) and 102(e), Quintana is not prior art under any section of 35 U.S.C. § 102. As such, Quintana cannot be used to support a 35 U.S.C. §103 rejection.

In light of the foregoing, Applicant respectfully requests the withdrawal of the 35 U.S.C. § 103 rejections of claims 5, 10, and 16.

(8) Conclusion.

In view of the foregoing, reversal of the final rejection of claims 1-17 and 19-21 and allowance of claims 1-17 and 19-21 are respectfully requested.

Respectfully submitted,

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Docket No.: 010341-9020-00
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APPENDIX A

Listing of Claims

What is claimed is:

1. (Previously Presented) A toilet comprising:

a bowl sized to contain a liquid;

a valve movable from a normally-closed position in which a liquid does not flow to the bowl to an open position in which the liquid is delivered to the bowl;

a sensor operable to sense a liquid level within the bowl and output an electrical signal indicative of the liquid level;

an actuator movable between a flush position and an idle position; and

an electronic controller coupled to the sensor to receive the electrical signal, the controller operable to move the valve to the open position in response to movement of the actuator to the flush position and the receipt of the electrical signal having a value indicative that the liquid level within the bowl is below a predetermined level.

2. (Original) The toilet of claim 1, wherein the valve includes a solenoid-actuated valve.

3. (Original) The toilet of claim 1, wherein the sensor includes a liquid level sensor.

4. (Original) The toilet of claim 1, wherein at least a portion of the sensor is disposed within the bowl.

5. (Previously Presented) The toilet of claim 1, wherein the sensor detects a pressure indicative of a liquid level within the bowl and sends an electrical signal to the controller when the pressure exceeds a predetermined value.

6. (Original) The toilet of claim 1, wherein the controller inhibits movement of the valve to the open position when the sensor senses a liquid level above the predetermined level.

7. (Original) The toilet of claim 1, wherein the controller includes a timer operable to initiate movement of the valve to the closed position after the valve has been in the open position for a predetermined length of time.

8. (Original) The toilet of claim 1, wherein the valve is the sole valve used to inhibit flooding and to flush the toilet.

9. (Previously Presented) An electrically-controlled toilet comprising:

a bowl sized to contain a liquid;

a solenoid-operated valve movable between a normally-closed position in which a liquid does not flow to the bowl and an open position in which the liquid is delivered to the bowl;

a liquid-level sensor at least partially positioned within the bowl and operable to sense a liquid level within the bowl, the liquid-level sensor operable to output an electrical flood signal in response to a sensed liquid-level above a predetermined level;

an actuator movable between a flush position and an idle position; and

a controller operable to move the valve to the open position in response to movement of the actuator to the flush position and the absence of the flood signal.

10. (Previously Presented) The toilet of claim 9, wherein the sensor detects a pressure and sends the flood signal to the controller when the pressure exceeds a predetermined value.

11. (Original) The toilet of claim 9, wherein the controller inhibits movement of the valve to the open position when the sensor senses a liquid level above the predetermined level.

12. (Original) The toilet of claim 9, wherein the controller includes a timer operable to initiate movement of the valve to the closed position after the valve has been in the open position for a predetermined length of time.

13. (Original) The toilet of claim 9, wherein the valve is the sole valve used to inhibit flooding and to flush the toilet.

14. (Previously Presented) The toilet of claim 9, wherein the sensor sends a first signal to the controller when the liquid level is below the predetermined value and the sensor sends a second signal to the controller when the liquid level is above the predetermined value.

15. (Previously Presented) A method of operating a toilet, the method comprising:

providing a bowl operable to contain a liquid;

sensing a liquid level within the bowl;

generating an electrical signal indicative of the liquid level;

moving an actuator to a flush position;

opening a valve to provide a flow of liquid to the bowl when the actuator is in the flush position and the generated electrical signal corresponds to a liquid level within the bowl that is below a predetermined value.

16. (Original) The method of claim 15, wherein the sensing step includes measuring a pressure within the bowl.

17. (Original) The method of claim 15, wherein opening the valve further comprises energizing a solenoid.

18. (Cancelled)

19. (Previously Presented) The method of claim 15, further comprising timing the duration that the valve is open.

20. (Original) The method of claim 19, further comprising closing the valve in response to the passage of a predetermined length of time.

21. (Previously Presented) The method of claim 15, further comprising:

providing an electronic controller;

delivering the generated electrical signal to the controller;

comparing the generated electrical signal to a flood signal; and

inhibiting the opening step when the generated electrical signal matches the flood signal.

APPENDIX B

Evidence

Applicants hereby submit the Declaration of Carlos Galeazzi under 35 U.S.C. §1.131 and two photographs taken June 9, 2003 illustrating a prototype of the invention claimed in the present application. The Declaration is provided to swear behind the Quintana reference which was filed July 21, 2003.

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PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Group Art Unit 3751

In re

Patent Application of

Keith Marshall

Application No. 10/678,394

Confirmation No. 3511

Filed: October 3, 2003

Examiner: Prunner, Kathleen J.

"ELECTRONIC FLUSH VALVE WITH FLOOD CONTROL"

DECLARATION UNDER 37 C.F.R. §1.131 OF CARLOS GALEAZZI

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Carlos Galeazzi, declare as follows:

1. I am an adult citizen of the United States, residing at 6753 Salerno Place, Alta Loma, California, 91701.

2. I am an employee of Acorn Engineering Co., Inc., located in La Puente, California. I have been involved in the design and manufacture of institutional plumbing fixtures for 10 years.

3. I was involved in the assembly of a prototype of the invention disclosed and claimed in U.S. Patent Application No. 10/678,394, filed October 3, 2003 and titled "ELECTRONIC FLUSH VALVE WITH FLOOD CONTROL."

4. I understand that Examiner Prunner, in an Office Action dated June 1, 2005, rejected claims 1-4, 6-9, 11-15, 17, and 19-21 under 35 U.S.C. 102(a) and 102(e) as being anticipated by Quintana et al (U.S. Patent No. 6,877,170). In addition, I understand that claims 5, 10, and 16 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Quintana et al. in view of Laverty, Jr.

5. I further understand that Quintana (U.S. Patent No. 6,877,170) was filed with the U.S. Patent and Trademark Office on July 21, 2003.

6. Figs. A and B attached hereto are reproductions of photographs taken on June 9, 2003.

7. The photographs show a prototype of the invention disclosed and claimed in U.S. Patent Application No. 10/678,394.

8. With reference to Fig. A, the prototype includes a bowl 15 sized to contain a fluid. Similar bowls 15 are better illustrated in the background of Fig. B. Fig. A also illustrates a valve 40 that is movable from a normally-closed position in which liquid does not flow down a pipe 41 to the bowl 15 to an open position in which liquid is able to flow down the pipe 41 to the bowl 15. A sensor 70 including a tube 88 is also illustrated in Figs. A and B. The tube 88 provides a fluid flow path between the bowl 15 and a sensor element 85 or pressure switch to allow the sensor 70 to sense a water level within the bowl 15. Fig. A also illustrates an actuator 90, or push button, that is movable between a flush position and an idle position. A MASTER-TROL controller 95 is illustrated in Fig. A and is connected to the push button 90, to the sensor 70, and to a solenoid 60 that controls actuation of the valve 40

such that the controller 95 can move the valve 40 to the open position in response to movement of the actuator 90 to the flush position and a liquid level within the bowl 15 below a predetermined level.

9. During operation of the prototype, the sensor 70 senses a liquid level within the bowl 15. Specifically, the sensor 70 determines if the liquid level is above or below a predetermined flood level. When the actuator 90 is moved to the flush position the valve 40 opens to provide a flow of liquid to the bowl 15 when the liquid level is below the predetermined flood level.

10. The prototype was operated for several weeks to verify that the design functioned as desired.

11. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like are punishable by fine and imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Carlos Galeazzi

APPENDIX C

Related Proceedings

None.